

Claims

1. A machine direction oriented polymeric film comprising (A) at least one propylene homopolymer, copolymer or blend of two or more thereof wherein (A) has a melt flow rate from about 5 to about 40 and (B) at least one olefin elastomer.

2. The film of claim 1 wherein (A) has a melt flow rate of from about 6 to about 32.

3. The film of claim 1 wherein (A) is a propylene homopolymer.

4. The film of claim 1 wherein (A) is a propylene copolymer prepared from propylene and an olefin having from 2 to about 12 carbon atoms.

5. The film of claim 1 wherein the propylene copolymer is a copolymer of propylene and one or more of ethylene, butylene, hexene, heptene, octene, nonene or decene.

6. The film of claim 1 wherein (A) is an propylene ethylene copolymer or propylene butylene copolymer.

7. The film of claim 1 wherein (B) is an ethylene homopolymer or copolymer, propylene homopolymer or copolymer, or mixtures of two or more thereof.

8. The film of claim 1 wherein (B) is a ethylene-butene copolymer, ethylene-octene copolymer, ethylene-hexene copolymer, and ethylene-hexene-butene terpolymer, or mixtures of two of more thereof.

9. The film of claim 1 wherein (B) has a melt flow rate of about 1 to about 40.

10. The film of claim 1 wherein (A) or (B) is a nucleated.

11. The film of claim 1 wherein the film is clear.

12. The film of claim 1 wherein (A) is prepared using a metallocene catalyst.

13. The film of claim 1 wherein (B) is prepared using a metallocene catalyst.

14. The film of claim 1 wherein all polymers of the film are hydrocarbon polymers.

5 15. The film of claim 1 further comprising (C) at least one nucleating agent.

16. The film of claim 1 wherein the film has been oriented by stretching in the machine direction at a stretch ratio of about 2:1 to about 9:1.

10 17. A clear, machine direction oriented film comprising (A) at least one propylene copolymer having a melt flow rate of about 5 to about 40, and (B) at least one olefin elastomer.

18. The film of claim 17 having a thickness from about 1 to about 7 mils.

19. The film of claim 17 wherein (A) or (B) is nucleated.

15 20. The film of claim 17 wherein (A) or (B) is prepared using a metallocene catalyst.

21. The film of claim 17 further comprising (C) at least one nucleating agent.

22. The film of claim 17 which is a monolayer film.

20 23. The film of claim 17, wherein (A) is a propylene ethylene copolymer or propylene butylene copolymer.

24. The film of claim 17 wherein (B) is an ethylene homopolymer or copolymer, propylene homopolymer or copolymer or mixtures of two or more thereof.

25 25. The film of claim 17 wherein (B) is a ethylene-butene copolymer, ethylene-octene copolymer, ethylene-hexene copolymer, ethylene-propylene-butene terpolymer, and ethylene-hexene-butene terpolymer, or mixtures of two of more thereof.

26. A clear, machine direction oriented film comprising about 50% to about 90% by weight of (A) at least one propylene-ethylene or at least one propylene-butylene copolymer having a melt flow rate of about 6 to about 30, and from about 10% to about 50% by weight of (B) at least one ethylene-butylene or at least one ethylene-hexene copolymer.

27. A multilayer film comprising a base layer having a upper and lower surface and at least one skin layer on the upper surface wherein the skin layer is derived from the film of claim 1.

28. The film of claim 27 wherein a skin layer is on the upper and lower surfaces of the base layer.

29. A multilayer film comprising a base layer having a upper and lower surface and at least one skin layer, derived from the film of claim 17, is on the upper surface.

30. The film of claim 29 wherein a skin layer is on the upper and lower surfaces of the base layer.

31. A multilayer film comprising a base layer having a upper and lower surface and at least one skin layer, derived from the film of claim 26 on the upper surface.

32. The film of claim 31 wherein a skin layer is on the first and second surfaces of the core layer.

33. A die-cuttable, stretch-oriented multilayer film comprising
(A) a base layer having an upper surface and a lower surface, and comprising polyethylene having a density of about 0.940 g/cm³ or less, a propylene homopolymer, propylene copolymer, or mixtures thereof, and

(B) a first skin layer prepared from (A) at least one propylene homopolymer, copolymer or blend of two or more thereof wherein (A) has a melt flow rate from about 5 to about 40 and (B) at least one olefin elastomer.

34. The multilayer film of claim 33 wherein the base layer comprises a propylene homopolymer or copolymer.

35. The multilayer film of claim 33 wherein the base layer comprises polyethylene having a density of from about 0.890 to about 0.925 g/cm³.

5 36. The multilayer film of claim 33 wherein the base layer or first skin layer, or both, also contain a nucleating agent.

37. The multilayer film of claim 33 containing a second skin layer covering the lower surface of the base layer.

10 38. The multilayer film of claim 37 wherein the composition of the second skin layer is different from the composition of the first skin layer.

39. An adhesive containing labelstock for use in adhesive labels which comprises

(A) the film of claim 1, and

15 (B) an adhesive layer having an upper surface and a lower surface wherein the upper surface of the adhesive layer is adhesively joined to the lower surface of the base layer.

40. The labelstock of claim 56 wherein the adhesive layer is a pressure-sensitive adhesive layer.

20 41. An adhesive containing labelstock for use in adhesive labels which comprises

(A) the film of claim 17, and

(B) an adhesive layer having an upper surface and a lower surface wherein the upper surface of the adhesive layer is adhesively joined to the lower surface of the base layer.

25 42. The labelstock of claim 41 wherein the adhesive layer is a pressure-sensitive adhesive layer.

43. An adhesive containing labelstock for use in adhesive labels which comprises

(A) the film of claim 33, and

(B) an adhesive layer having an upper surface and a lower surface wherein the upper surface of the adhesive layer is adhesively joined to the lower surface of the base layer.

5 44. The labelstock of claim 43 wherein the adhesive layer is a pressure-sensitive adhesive layer.

 45. A pressure-sensitive adhesive label die-cut from the labelstock of claim 39.

10 46. A pressure-sensitive adhesive label die-cut from the labelstock of claim 41.

 47. A pressure-sensitive adhesive label die-cut from the labelstock of claim 43.